ABSTRACT

AIM:

The aim of this study is to evaluate the staining ability of coffee, tea and coca - cola on three different nanohybrid composites using reflectance spectrophotometry as a function of Commission Internationale delÉclairage LAB (CIELAB).

MATERIALS AND METHODS:

Thirty discs of composite samples were made using polytetrafluoroethylene rings of 2 mm thickness and 20 mm diameter, in each composite group. Group I – Polofil NHT (30 specimens), Group II – Filtek Z350 (30 specimens), Group III – Tetric N-Ceram (30 specimens). The baseline colour measurement of 90 specimens were measured. All the 90 samples were not exposed to any beverages and were taken as the control group. Once the baseline values are obtained, the specimens were exposed to coffee, tea and coca cola with 10 samples from each group for each beverage. After seven days of exposure, the colour change was evaluated using the CIELAB ΔE measurement. Statistical analysis was done using ANOVA for inter group analysis and Tukey HSD for multiple comparisons.

RESULTS:

The combinations starting with maximum staining and ending with minimum staining are as follows – (Filtek + coffee) > (Polofil +coffee) > (Filtek + tea) > (Tetric + coffee) > (Polofil + tea) > (Filtek + coca cola) > (Polofil + coca cola) > (Tetric + tea) > (Tetric + coca cola). Among the groups, stainability of Group II > Group I > Group III. Among the beverages, the stainability of coffee > tea > coca cola. Statistically significant difference found between coffee and coca cola in all composites. Whereas, statistical significant difference between Filtek and Tetric found in all beverages.

CONCLUSION:

The commonly consumed beverages coffee, tea and coca cola all produced colour changes on the nanohybrid composites tested in this study, with coffee producing more clinically significant colour change.

KEY WORDS:

Beverages, nanohybrid composites, reflectance spectrophotometry.